

APPENDIX A  
PENDING CLAIMS

57. A transgenic non-human animal comprising in its genome a human light chain immunoglobulin transgene, said transgene comprising a plurality of human light chain V genes, a plurality of human light chain J genes, and a human light chain C gene, which sequences are operably linked to transcription regulatory sequences and undergo rearrangement in B lymphocytes *in vivo* to produce a repertoire of rearranged transgenes encoding a plurality of human light chain polypeptides, which human light chain polypeptides are produced in said transgenic non-human animal.
58. The transgenic non-human animal of claim 57, wherein said transgene comprises a plurality of human V $\kappa$  genes, a plurality of human J $\kappa$  genes, and a human C $\kappa$  gene.
59. The transgenic non-human animal of claim 58, wherein said transgene further comprises a human 3' kappa enhancer segment.
60. The transgenic non-human animal of claim 59, wherein the human 3' kappa enhancer segment is a 4 kb BamHI fragment containing the human 3' kappa enhancer.
61. The transgenic non-human animal of claim 57, wherein said animal further comprises an inactivated endogenous mouse light chain immunoglobulin gene locus.
62. The transgenic non-human animal of claim 57, wherein said animal is a rodent.
63. The transgenic non-human animal of claim 62, wherein said animal is a mouse.
64. A transgenic non-human animal comprising in its genome a human light chain immunoglobulin transgene, said transgene comprising a plurality of human light chain V genes, a plurality of human light chain J genes, and a human light chain C gene, which sequences are operably linked to transcription regulatory sequences and undergo rearrangement in B

lymphocytes *in vivo* to produce a repertoire of rearranged transgenes encoding a plurality of human light chain polypeptides, which human light chain polypeptides are produced in said transgenic non-human animal, wherein said non-human animal further produces a repertoire of human heavy chain polypeptides that pair with said light chain polypeptides to form a repertoire of human immunoglobulins in said non-human animal.

65. The transgenic non-human animal of claim 64, wherein said transgene comprises a plurality of human V<sub>K</sub> genes, a plurality of human J<sub>K</sub> genes, and a human C<sub>K</sub> gene.

66. The transgenic non-human animal of claim 65, wherein said transgene further comprises a human 3' kappa enhancer segment.

67. The transgenic non-human animal of claim 66, wherein the human 3' kappa enhancer segment is a 4 kb BamHI fragment containing the human 3' kappa enhancer.

68. The transgenic non-human animal of claim 64, wherein said animal further comprises an inactivated endogenous mouse light chain immunoglobulin gene locus and an inactivated endogenous mouse heavy chain immunoglobulin gene locus.

69. The transgenic non-human animal of claim 64, wherein said animal is a rodent.

70. The transgenic non-human animal of claim 69, wherein said animal is a mouse.

71. The transgenic non-human animal of claim 64, which produces antigen-specific human immunoglobulins when said transgenic non-human animal is immunized with an antigen.

72. An isolated human immunoglobulin transgene, said transgene comprising a plurality of human light chain V genes, a plurality of human light chain J genes, and a human light chain C gene, which sequences are operably linked to transcription regulatory sequences and capable of undergoing rearrangement in B lymphocytes *in vivo* to produce a repertoire of rearranged transgenes encoding a plurality of human light chain polypeptides, which human light chain

polypeptides are produced in a transgenic non-human animal when said transgene is integrated into the genome of said transgenic non-human animal.

73. The isolated transgene of claim 72, which comprises a plurality of human V $\kappa$  genes, a plurality of human J $\kappa$  genes, and a human C $\kappa$  gene.

74. The isolated transgene of claim 73, which further comprises a human 3' kappa enhancer segment.

75. The isolated transgene of claim 74, wherein the human 3' kappa enhancer segment is a 4 kb BamHI fragment containing the human 3' kappa enhancer.